



User Manual

English

APC Smart-UPS® RT
UXI/UXICH

SURT15000/20000 VA
230 Vac

Tower
Uninterruptible Power Supply

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Introduction

About this UPS

The American Power Conversion (APC®) Smart-UPS® RT is a high performance uninterruptible power supply (UPS) that provides protection for electronic equipment from utility power blackouts, brownouts, sags and surges. The UPS protects electronic equipment from small utility fluctuations and large disturbances by providing continuous on-line double converted power. The UPS provides battery backup until utility power returns to safe levels or the batteries are fully discharged.

Unpack package contents

Read the Safety Guide before installing the UPS.

Inspect the UPS upon receipt. Notify the carrier and dealer if there is damage.

The packaging is recyclable; save it for reuse or dispose of it properly.

Check the package contents:

<ul style="list-style-type: none">• UPS• Front bezel (2)• Top cover and four screws• Input wiring tray• Output wiring tray• PowerView display module• Battery cable assemblies• DB9 serial cable• Ground wire	<ul style="list-style-type: none">• Literature kit containing:<ul style="list-style-type: none">– Product documentation– Smart-UPS® RT User Manuals CD– Network Management Card Utility CD– Network Management Card documentation– Safety information– Warranty information
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NOTE: The model and serial numbers are located on a small, rear panel label. For some models, an additional label is located on the chassis under the front bezel.

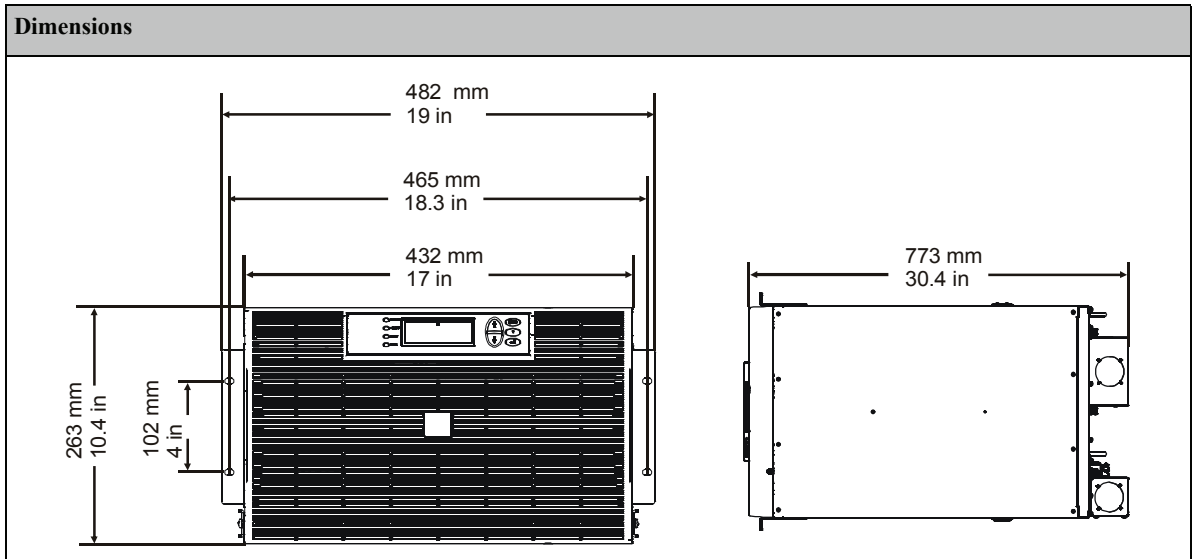
Specifications

Environmental Specifications

Temperature Operating Storage	32° to 104° F (0° to 40° C) 5° to 113° F (-15° to 45° C) charge the UPS battery every six months 86° to 158° F (30° to 70° C) charge the UPS battery every three months	This unit is intended for indoor use only. Select a location sturdy enough to handle the weight. Do not operate the UPS where there is excessive dust or the temperature or humidity are outside the specified limits. This unit has front to rear airflow. Allow adequate space for proper ventilation. Environmental factors impact battery life. High temperatures, poor utility power, and frequent, short duration discharges will shorten battery life.
Maximum Elevation Operating Storage	10,000 ft (3,000 m) 50,000 ft (15,240 m)	
Humidity	0 to 95% relative humidity, non-condensing	

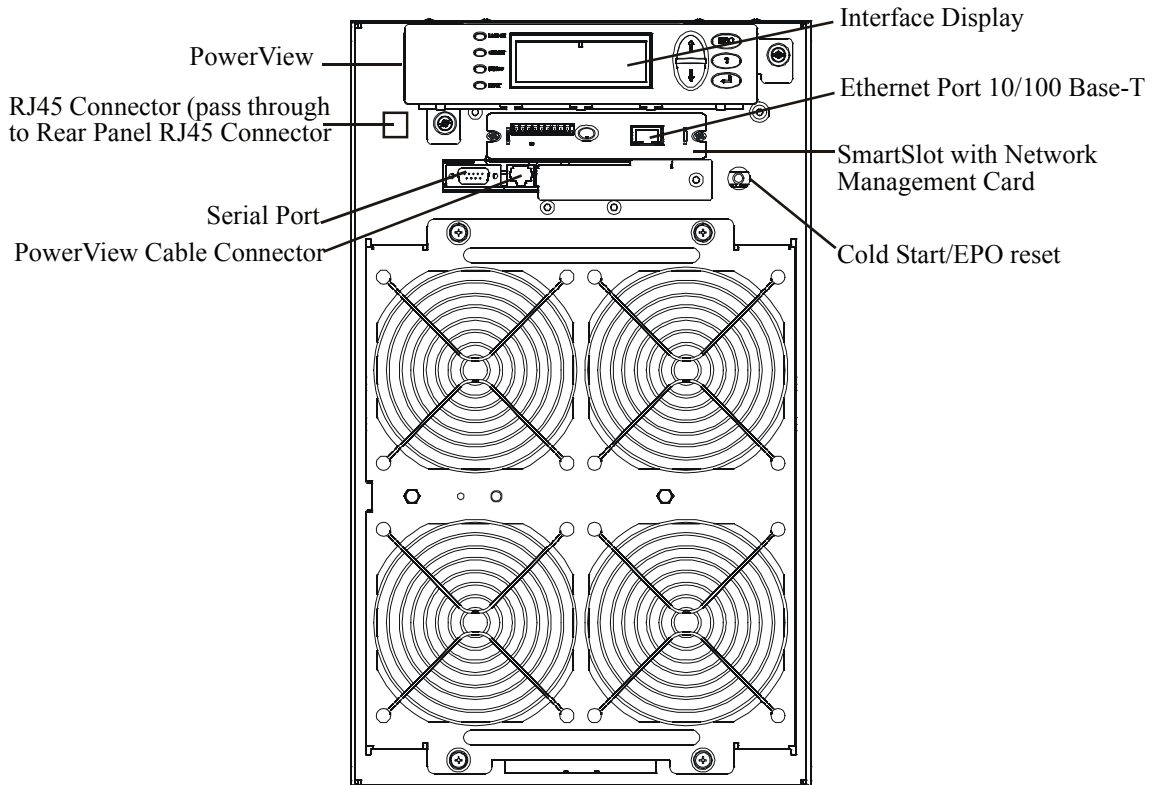
Physical Specifications

Weight (unpacked)		
UPS	145 lbs (66 kg)	



Installation

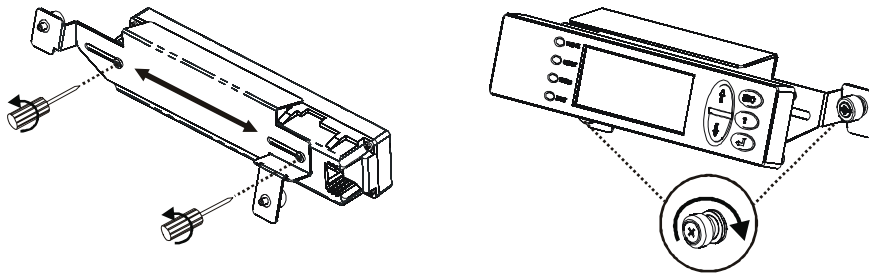
Tower front panel



Install PowerView

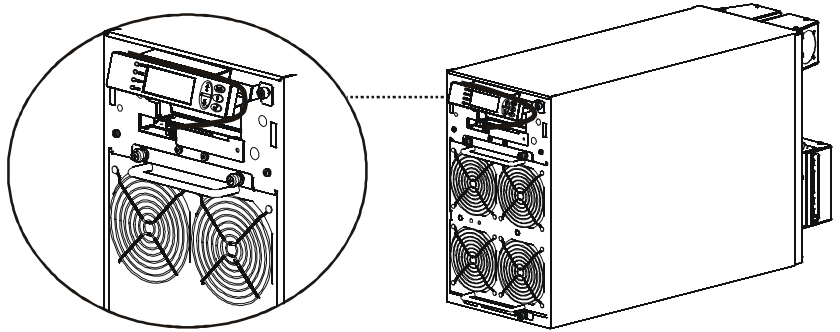
Prior to attaching the PowerView to the UPS:

1. Loosen the two bracket screws on the back of the PowerView module.
 - a. Slide the bracket to the position that will accommodate the screw holes on the UPS.
 - b. Tighten the screws on the bracket.
2. Secure the PowerView to the UPS using the two thumb screws attached to the PowerView.



Connect PowerView

Connect the PowerView cable to the PowerView connector on UPS.



Route ethernet cable and install top cover and bezels

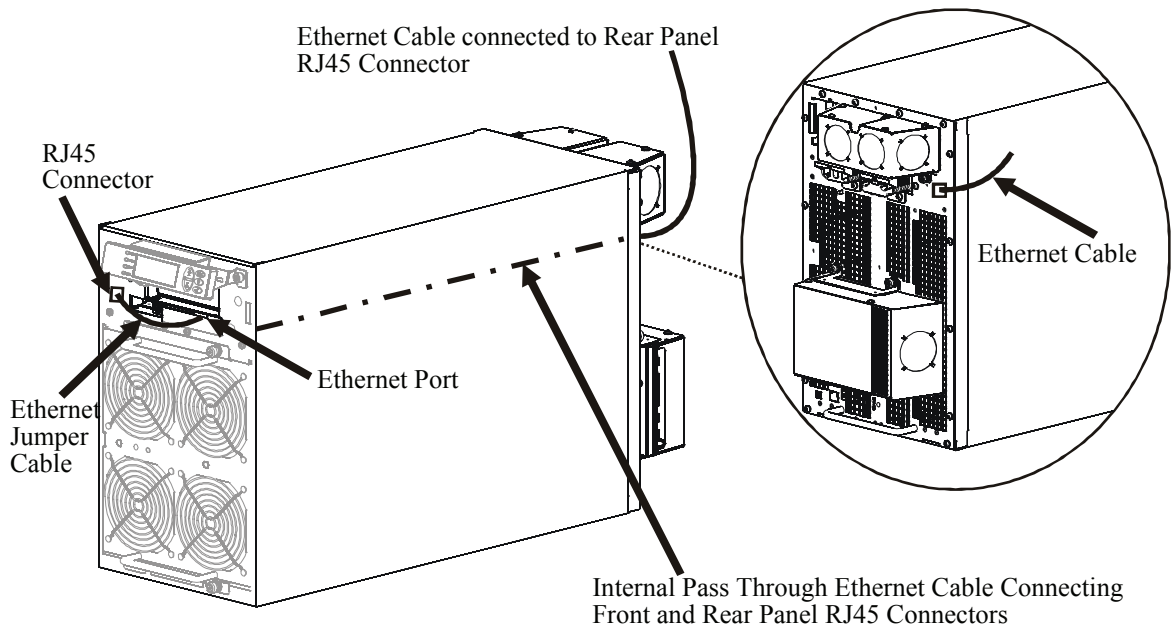
There are three ways to access the ethernet port on this unit:

1. Rear panel access utilizing ethernet jumper cable on front panel
2. Front panel access routing ethernet cable under top cover
3. Front panel access routing ethernet cable through bezel notch

Rear panel access utilizing ethernet jumper cable on front panel

Locate the RJ45 connector and the ethernet port on the front panel of the UPS. Connect the ethernet jumper cable (included), to the RJ45 connector and the ethernet port.

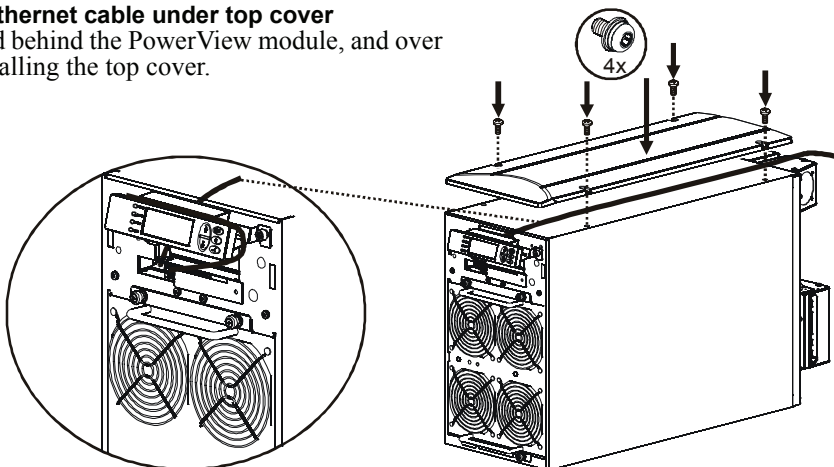
Connect a network cable (not included), to the RJ45 connector on the rear panel of the UPS.



Front panel access routing ethernet cable under top cover

An ethernet cable can be routed behind the PowerView module, and over the top of the UPS prior to installing the top cover.

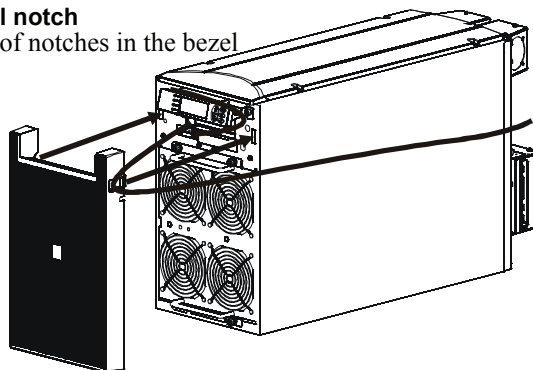
Install the top cover.



Front panel access routing ethernet cable through bezel notch

An ethernet cable can be routed from the UPS through one of notches in the bezel prior to installing the bezel.

Install the bezel.



Accessories

Install accessories prior to connecting power to the UPS.

- Refer to the APC Web site, www.apc.com for available accessories.
- User documentation for the Network Management Card installed on this UPS is available on the Utility CD included with this unit.

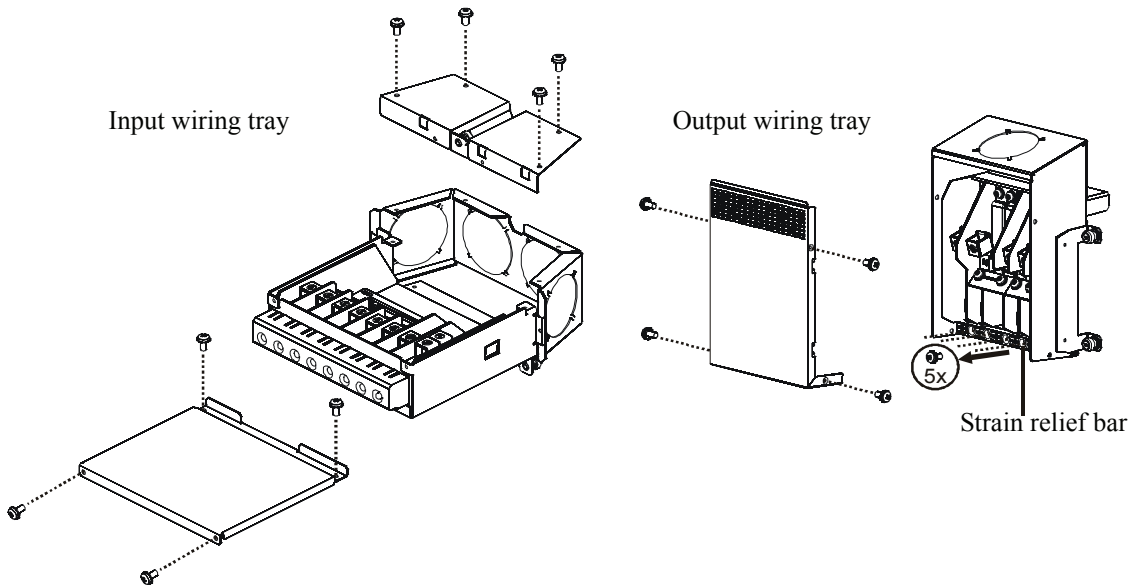
Optional accessories

- Maintenance bypass
- Equipment cart

Hardwire the UPS

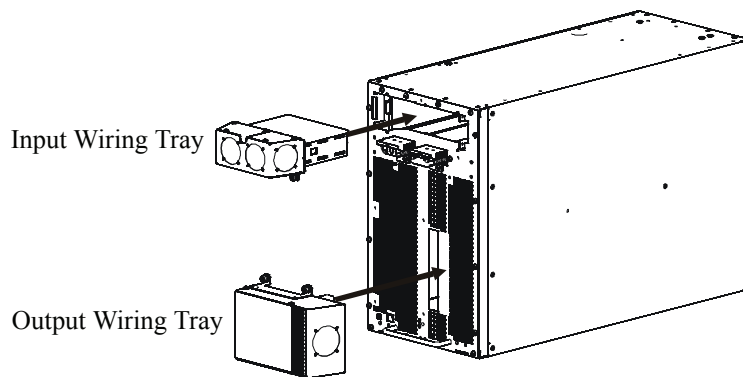
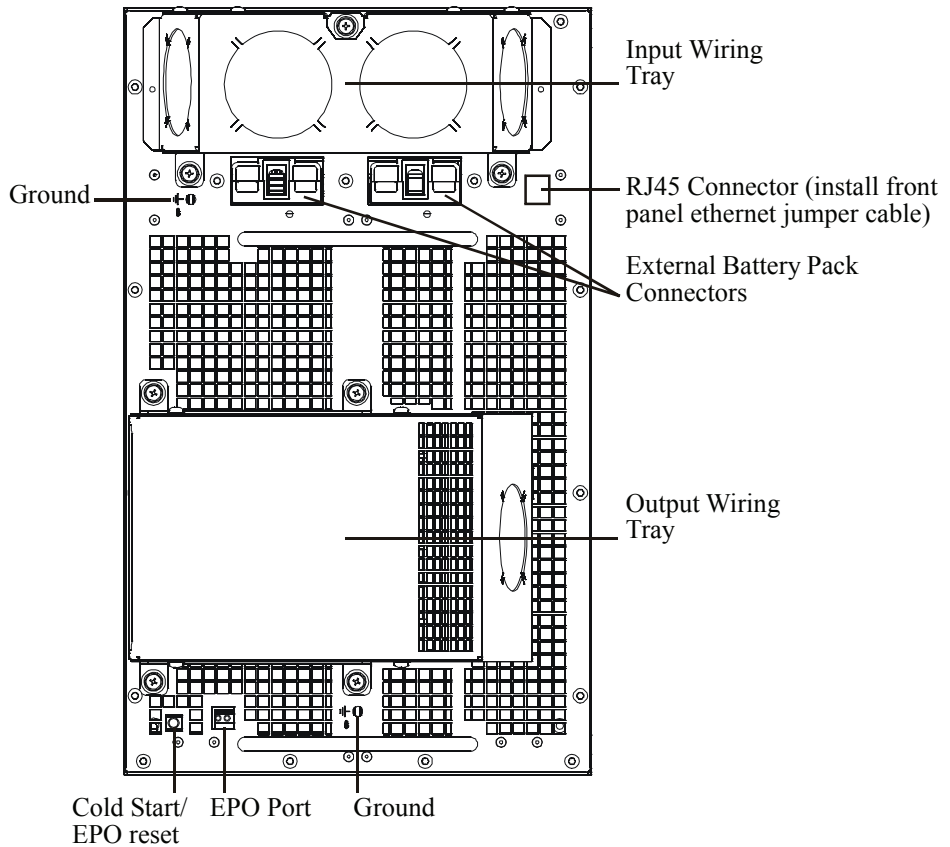
Wiring must be performed by a qualified electrician. Adhere to all local and national electrical codes.

1. For input wiring only, install a utility circuit breaker in accordance with local electrical codes.
2. Switch the utility circuit breaker OFF.
3. Remove the appropriate circular knockouts from the input and output wiring trays.
4. Remove the screws that secure the covers and take the covers off of the trays.
5. Remove the five screws that secure the strain relief bar.










6. Remove the appropriate jumpers for input power source compatibility and output wiring options, (refer to the *Wiring* sections in this manual).
7. Run wires through the knockout holes to the terminal blocks. Wire the ground terminal first, (refer to tables and graphics in the *Wiring* sections this manual).
8. Use strain-relief (not supplied), on the hardwired input and output power cables.
9. **Replace the wiring tray covers. Failure to do so may result in personal injury or equipment damage.**
10. Install the wiring trays, (refer to graphics below).

Install input and output wiring trays in UPS rear panel



Wiring Specifications

Adhere to national and local electrical codes when wiring.

Input Connections	Output Connections
Main Input Single-Phase: Wire to L1, N, and  Three-Phase: Wire to L1, L2, L3, N, and 	Hardwire Single-Phase: Wire to L1, N, and  Three-Phase: Wire to L1, L2, L3, N, and 
Bypass Input (optional) Single-Phase: Wire to B1, N, and  Three-Phase: Wire to B1, B2, B3, N, and 	Single-phase PDU XL battery pack PDU to UPS: Wire L1, N, 

System	Wiring	Number of Phases	Voltage	Current Full Load (maximum)	External Input Circuit Breaker (typical)	Wire Size (typical)*
SURT15000UXI/ UXICH	Input	1	220/230/ 240 Vac	83 A	100 A / 1-pole	25/35 mm ² (2/1 AWG)
	Input	3	380/400/ 415 Vac	28 A / phase	35 A / 3-pole	6 mm ² (8 AWG)
	Output	1	220/230/ 240 Vac	65 A	not required	25 mm ² (2 AWG)
	Output	3	380/400/ 415 Vac	22 A / phase	not required	6 mm ² (8 AWG)
SURT20000XI/ UXICH	Input	1	220/230/ 240 Vac	105 A	125 A / 1-pole	35/50 mm ² (1/0 AWG)
	Input	3	380/400/ 415 Vac	35 A / phase	50 A / 3-pole	10 mm ² (6 AWG)
	Output	1	220/230/ 240 Vac	87 A	not required	35 mm ² (1 AWG)
	Output	3	380/400/ 415 Vac	29 A / phase	not required	10 mm ² (6 AWG)

* Terminal screw tightening torque: 40 lbf-in (4.5 N-m)

The acceptable input frequency range is 40 to 70 Hz.

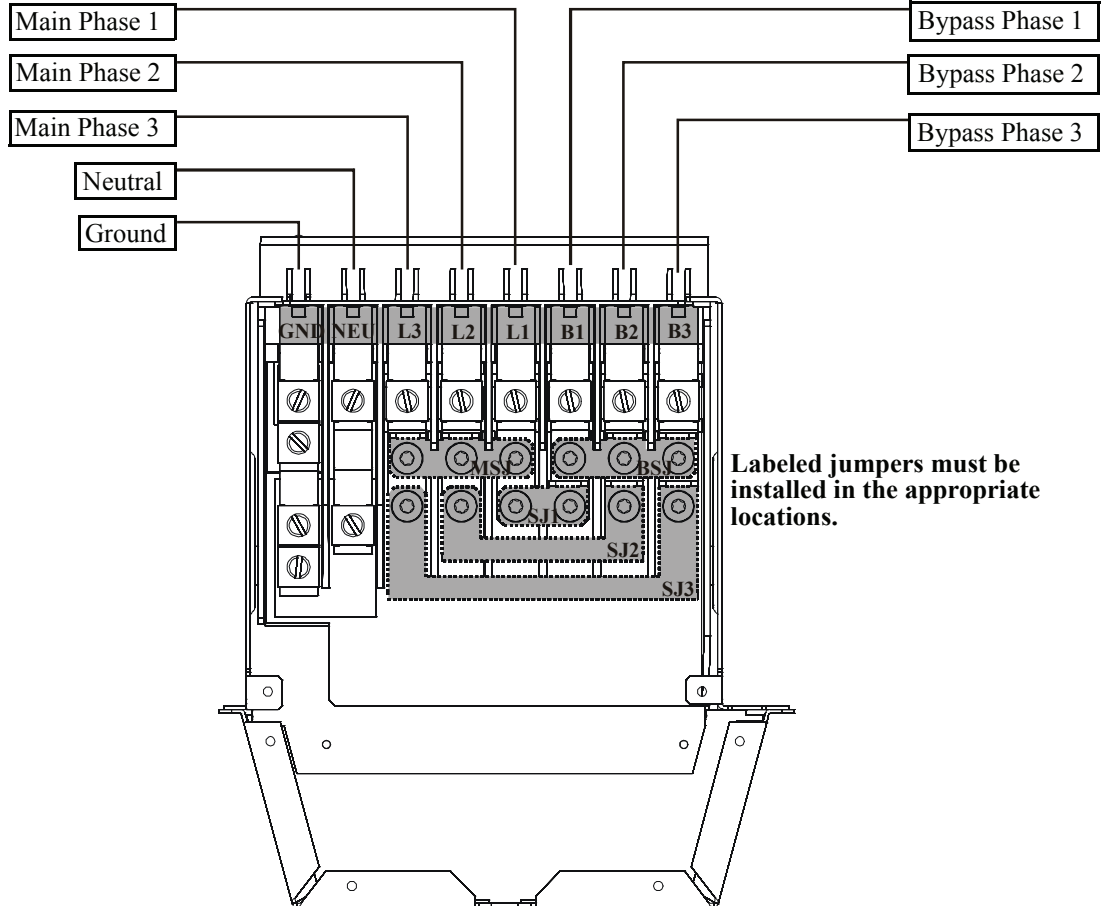
The output frequency is user selectable. Refer to the PowerView display menu screens for available options.

Input wiring options

Input wiring overview: Refer to the diagrams on the following pages for input wiring options.

Main Input Power Single and Three Phase

Bypass Input Power Single and Three Phase

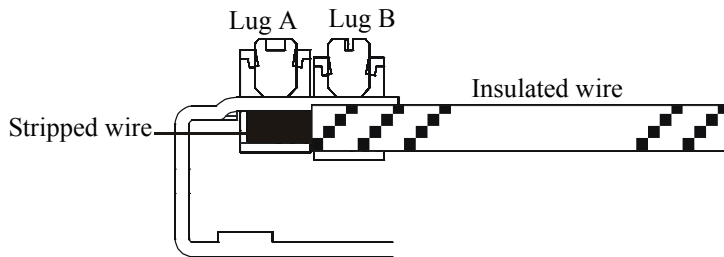


Labeled jumpers must be installed in the appropriate locations.

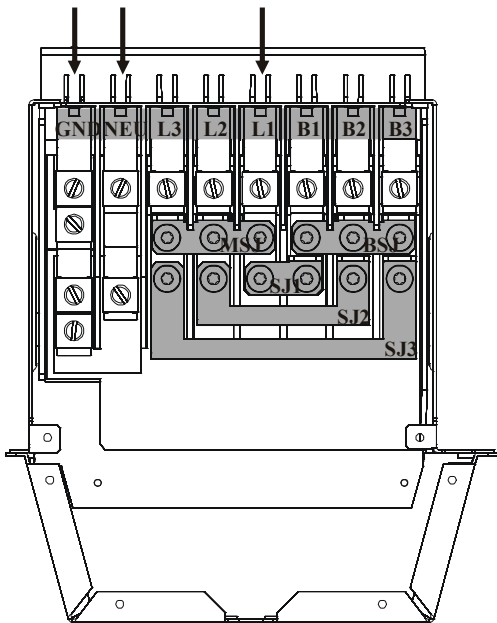
<i>Input/Output Jumper Configurations</i>		Input Jumpers					Output Jumpers
Power I/O Configuration Input:Output	Separate Bypass Feed	SJ1	SJ2	SJ3	MSJ	BSJ	OSJ
1:1**	No	✓	✓*	✓*	✓	✓	✓
1:1	Yes				✓	✓	✓
3:1	No	✓				✓	✓
3:1	Yes					✓	✓
3:3	No	✓	✓	✓			
3:3	Yes						
* Optional ** Factory Default							

Ensure ground wire conductor and insulator are securely fastened. To connect the ground wire:

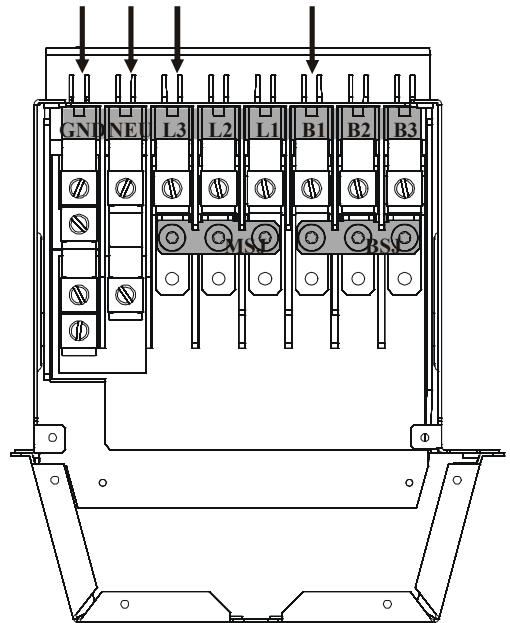
1. Strip the cable of insulation, exposing the wire. Secure the exposed wire with lug “A”.
2. Secure the insulated portion of the cable with lug “B”.



Input wiring option 1 Factory Default
Single phase input, single phase output,
single feed

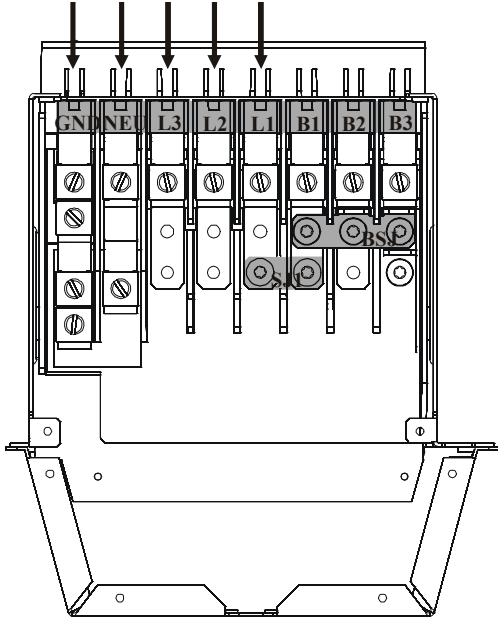


Input wiring option 2
Single phase input, single phase output,
dual feed



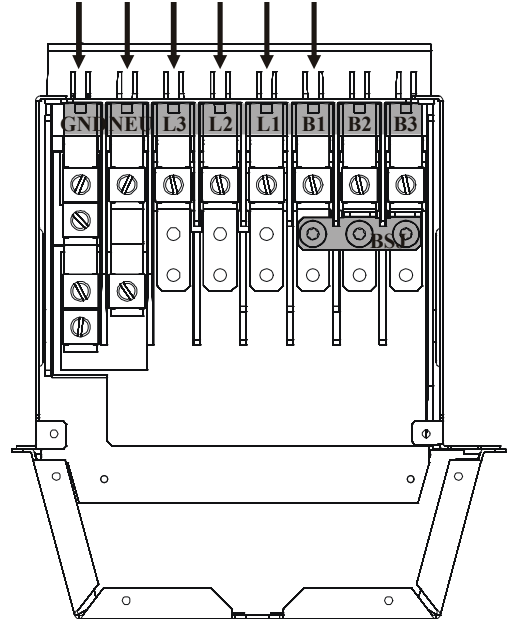
Input wiring option 3

**Three phase input, single phase output,
single feed**



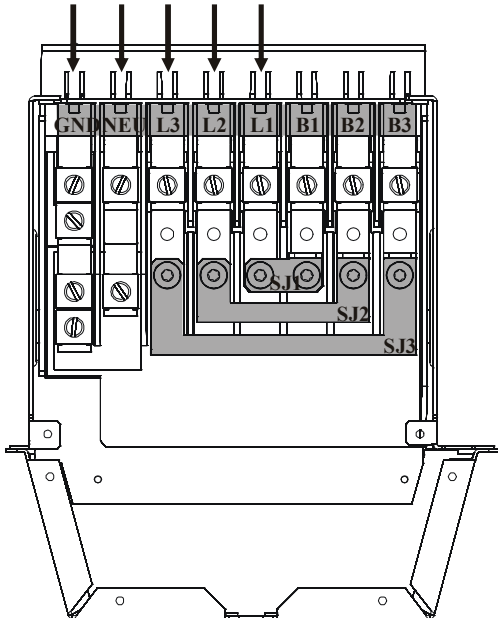
Input wiring option 4

**Three phase input, single phase output,
dual feed**



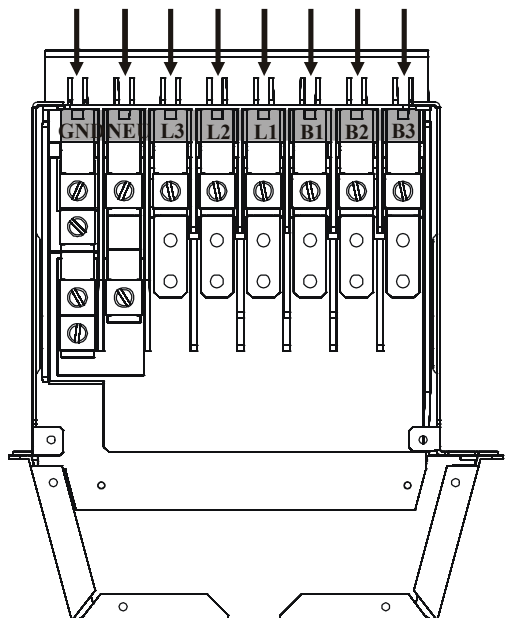
Input wiring option 5

**Three phase input, three phase output,
single feed**



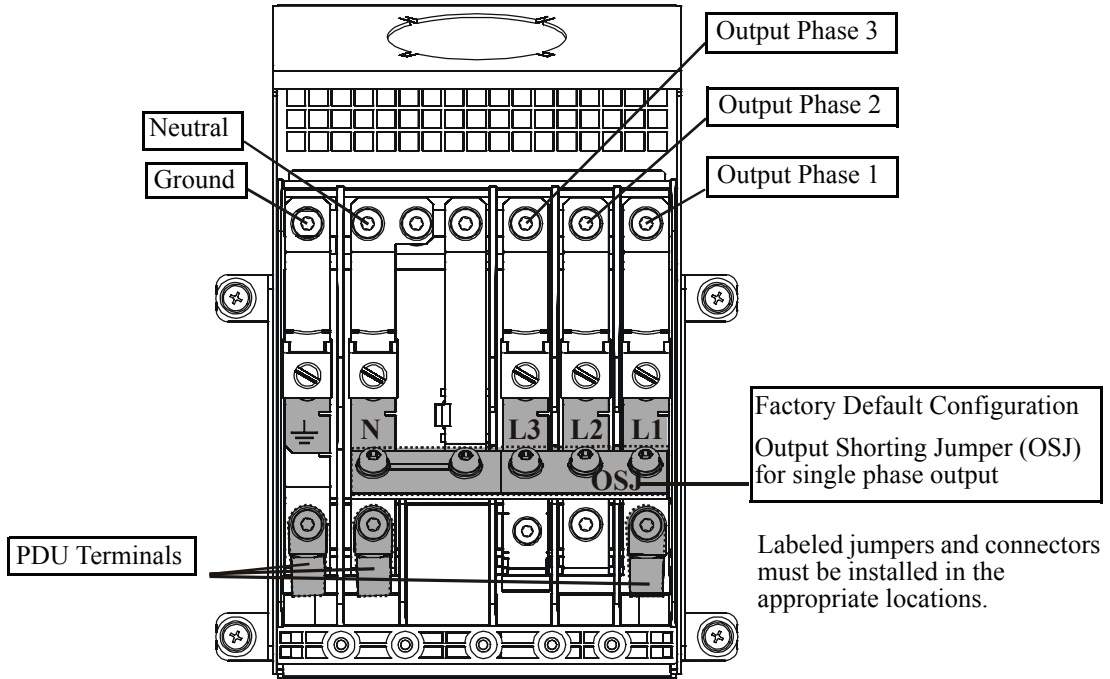
Input wiring option 6

**Three phase input, three phase output,
dual feed**

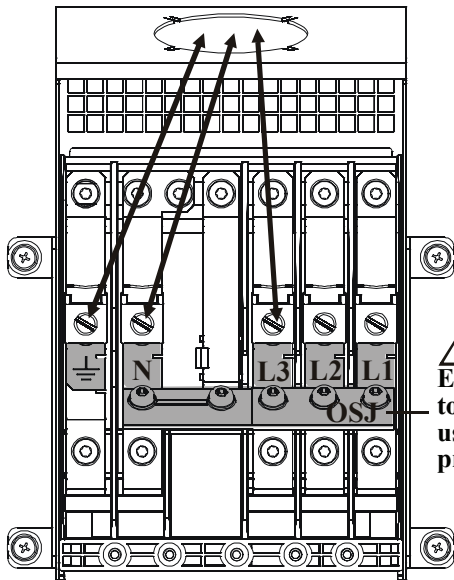


Output wiring options

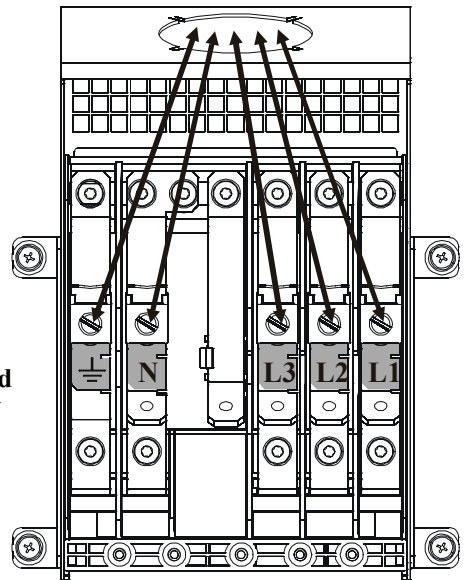
Output wiring overview. Refer to the diagrams on the following pages for output wiring options.




Output hardwire option 1
Single phase hardwire output connection



Output hardwire option 2
External battery pack PDU not connected




 Ensure the OSJ is secured to the output wiring tray using the five screws provided.

Connect the External Batteries

Battery Safety

Read and adhere to the following warnings when installing or servicing the external batteries.

Failure to observe these warnings may result in serious injury, death, or damage to the equipment.

<p>WARNINGS</p> 	<ul style="list-style-type: none">• Do not attempt to install or service external batteries alone. A qualified electrician should perform the installation and servicing of external batteries.• Disconnect charging source(s) BEFORE connecting or disconnecting battery terminals.• External batteries may retain lethal voltages after power has been disconnected and all switches are off.• Use extreme caution when making terminal connections. Do not allow cables to touch anything except the intended terminal.
<p>PRACTICES</p>	<p>Always wear:</p> <ul style="list-style-type: none">• Goggles or face shields• Acid-resistant, insulated gloves• Protective aprons <p>Always Use:</p> <ul style="list-style-type: none">• Insulated tools• Rubber mats to cover batteries during servicing• Rubber mats or rubber stands on the floor• Adequate lifting devices <p>Remove:</p> <ul style="list-style-type: none">• Watches, rings, and other metal objects from your body
<p>PRECAUTIONS</p>	<ul style="list-style-type: none">• To avoid static build-up, service personnel should establish a grounding contact prior working on batteries.• Do not lay tools or metal parts on top of batteries.• Lead-acid batteries contain hazardous, toxic materials.<ul style="list-style-type: none">– Do not open, alter or mutilate batteries. Internal materials may be harmful to the skin and eyes.– Do not dispose of batteries in a fire. There is danger of explosion.• Handle, transport and recycle batteries in accordance with local codes and regulations.

APC battery solution

Refer to the APC Web site www.apc.com, or contact an APC dealer for information regarding APC external battery pack(s).

Third party battery solution

Batteries must be Sealed Lead-Acid type. Use 50 A, 250 Vdc fuses with an Interrupt rating of $\geq 20,000$ A.

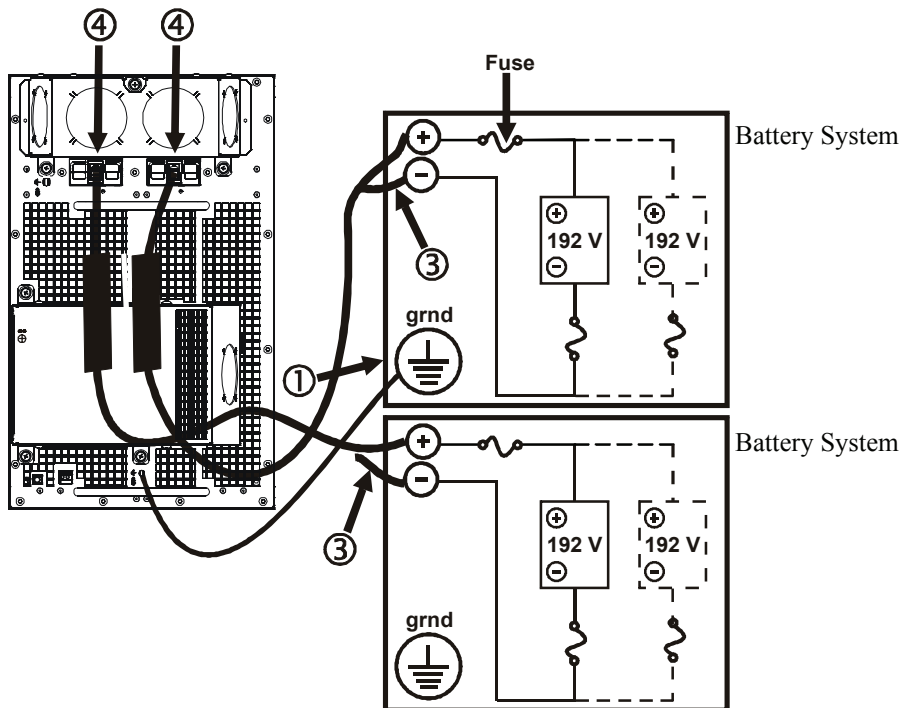
Ensure that the external batteries are wired prior to connecting the batteries to the UPS.

Two separate, isolated 192 V battery systems are required when using a third party battery solution. One cable assembly must be wired to each 192 V battery system. Two cable assemblies are included with the UPS, one for each 192 V battery system.

Each battery system must have identical Amp-hrs.

Connect the ground and wire the battery system

1. Connect the ground wires (supplied), to each battery enclosure ground and the ground screw on the back of the UPS.
2. Cut off one of the connectors on each cable assembly exposing the positive and negative wires in each cable.
3. Connect the positive and negative wires to the positive and negative terminals on each external battery system. Ensure that the proper polarities are connected.
4. Plug the cable connectors into the battery connector receptacles on the back of the UPS.
5. Enter the external battery capacity through the PowerView menu.
 - a. This setting determines battery runtime and battery charge rate.
 - b. The number entered in the menu screen Ext Bat Cap, must equal the number of Amp-hrs in one of the identical battery systems.



Operation

The UPS has three operation mode options.

Normal operation

During normal operation, the UPS double converts utility power to conditioned power for the connected load.

Battery operation

During battery operation, the UPS provides power to the connected load from batteries for a finite period of time. The UPS transfers to battery operation if the supply of utility power fails or is outside predefined limits.

Bypass operation

Bypass mode is reached either as a user selection or automatically.

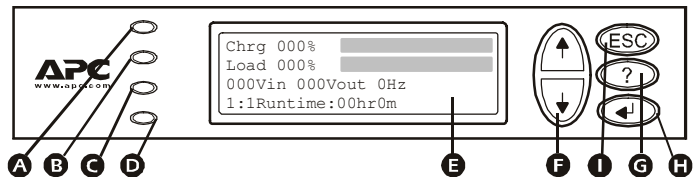
- Bypass mode can be selected through the **Control** menu screen on the PowerView display
- The UPS will automatically switch into bypass mode if:
 - Both normal and battery operation modes are unavailable
 - An output overload condition occurs
 - The UPS has an internal fault

During bypass operation the utility power is connected to the load, bypassing the internal converters. If bypass mode becomes unavailable the UPS will automatically switch to mains power. In the event that mains power is unavailable the system will switch to battery power.

PowerView Interface Display

The four LEDs to the left of the LCD display indicate the operational status of the UPS.

The five navigation keys to the right of the LCD display are used to select and open menu items, to access information, change system parameters, and to access context-sensitive help.




A	LOAD ON	When LED illuminates green, the UPS supplies power to the load
B	ON BATT	When LED illuminates yellow, power to load flows from the batteries to the power module
C	BYPASS	When LED illuminates yellow, power to the load is supplied through bypass
D	FAULT	When LED illuminates red, a fault condition exists
E	LCD Screen	Displays menu screens for alarms, status data, instructional help, and configuration items
F	UP and DOWN navigation keys	Used to scroll through and select menu items
G	HELP key	Opens context-sensitive help
H	ENTER key	Opens menu items and saves changes to system parameters
I	ESC key	Returns to previous screen displayed

Navigating menu screens

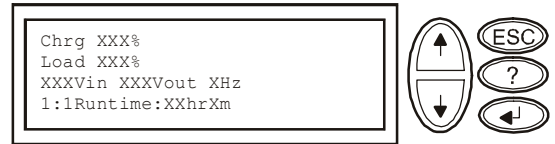
Use the ESC key to navigate between menu screens.

Use the UP/DOWN arrow keys to scroll through the list of sub menus and commands on any screen.

➔ arrow indicates that there are sub menus containing user selectable commands.

Use the ENTER key  to navigate to a sub menu and to select user configurable commands.

To access the overview status screen on the LCD press the ESC key.



To access the main menu screen from the overview status screen, press the ENTER key.



Main Menu Screen

From the main menu screen it is possible to command, configure, and monitor the system using the sub menu screens: **Control, Status, Setup, Logging, Display, Diags** and **Help** (refer to *Sub menu screens* section in this manual).

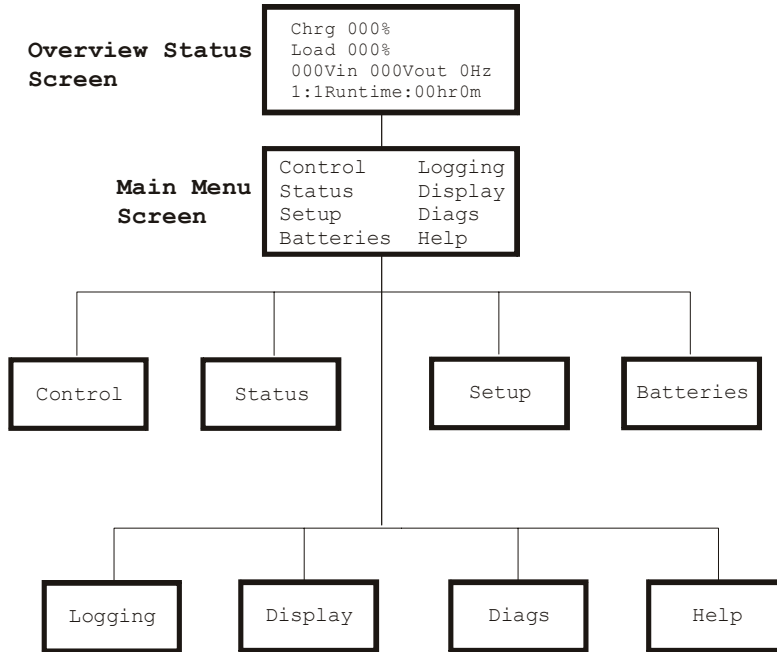
Use the UP/DOWN arrow keys to select the menu to be accessed.

Press the ENTER key to open a sub menu screen.



Menu Tree

The menu tree provides an overview of the top level menu screens.



Navigating sub menu screens

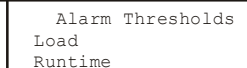
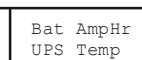
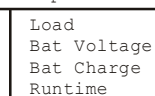
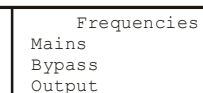
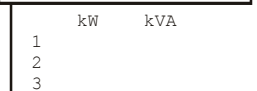
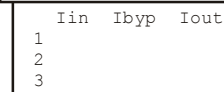
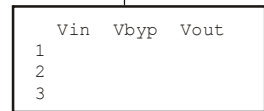
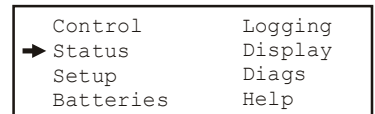
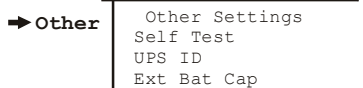
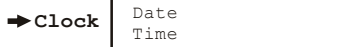
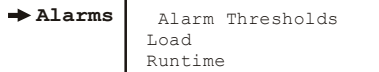
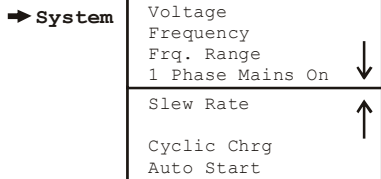
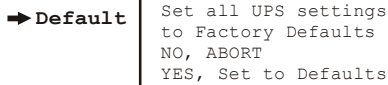
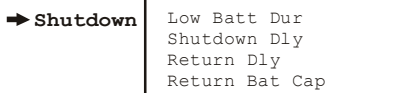
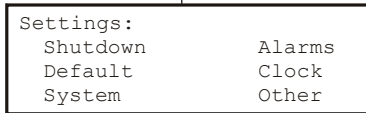
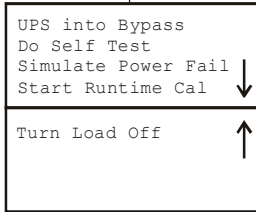
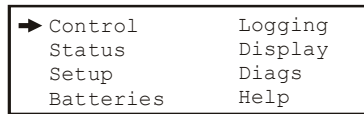
Use the UP/DOWN arrow keys to scroll through the list of functions and commands on a sub menu screen.

A ↓ after the last entry on a sub menu, indicates a continuation of the function/command list.

Use the UP/DOWN arrow keys to view the remaining entries in the list.

Use the ENTER key to select a command and move to sub menus associated with that function/command.

Sub menu screens






Output Frequency Options: Auto Sensing; 50 Hz; 60 Hz

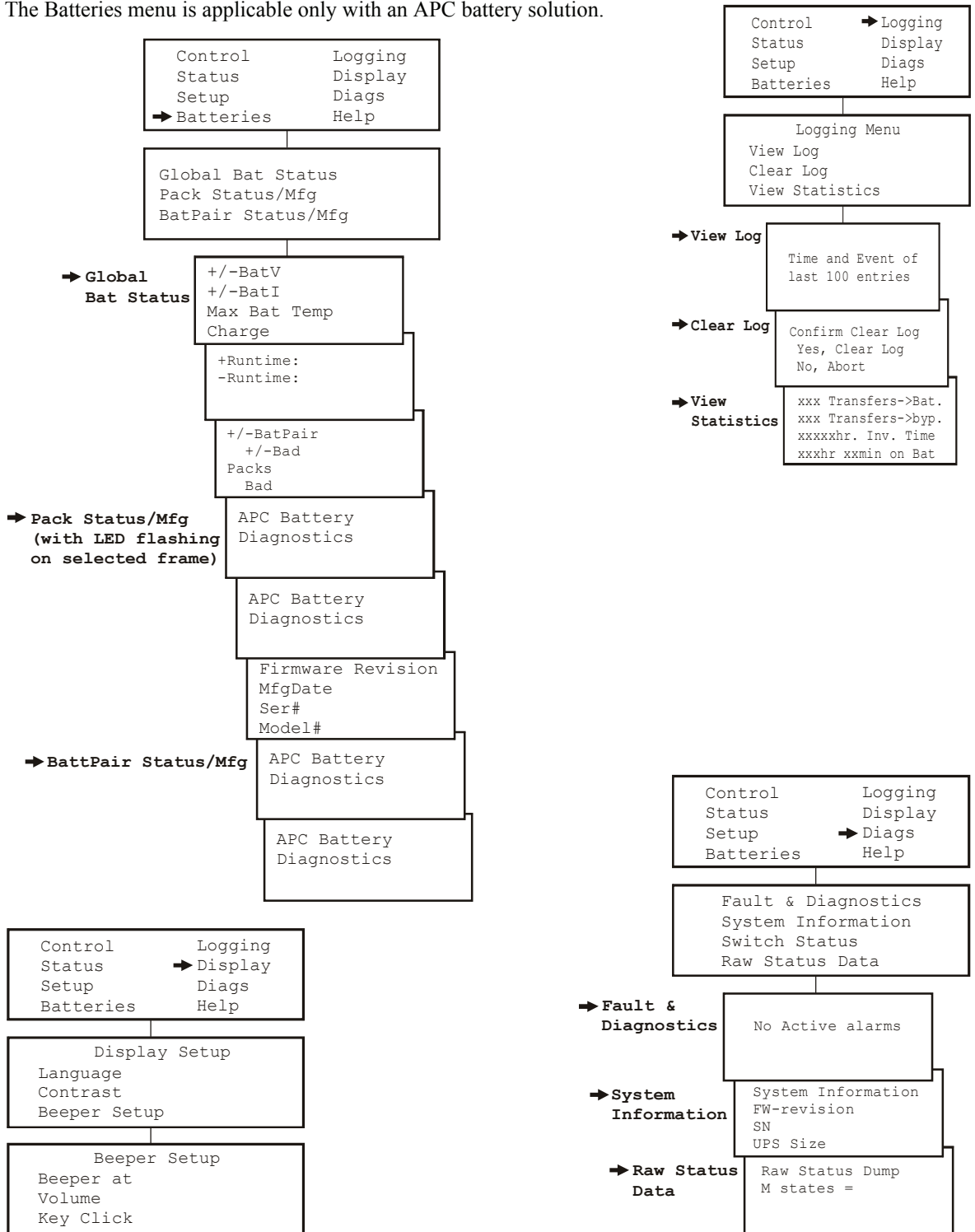
50 Hz frequency range: 50±3 Hz; 50±0.1 Hz

60 Hz frequency range: 60±3 Hz; 60±0.1 Hz

Clock: The date and time functions are used to time-stamp events in the event log. To avoid inaccuracies, change the time setting to reflect day light saving time where applicable.

Ext Bat Cap: Press . Use the UP/DOWN arrow keys to select the desired value. Press  to move to the next digit. Press  after selecting the final value, to lock in the battery capacity setting.

The Batteries menu is applicable only with an APC battery solution.



Start-Up

Connect load to UPS

1. The UPS features chassis ground connection screws located on the rear panel, for connecting the ground leads on transient voltage devices.

Prior to connecting the grounding cable, ensure that the UPS is NOT connected to utility or battery power.

2. Connect equipment to the UPS.

NOTE: This UPS is equipped with an external battery connector on the rear panel of the unit.

- The battery charges to 90% capacity during the first three hours of normal operation. *Do not* expect full battery run capability during this initial charge period.
- Refer to the APC Web site, www.apc.com for battery runtimes.
- Where appropriate use an APC extension battery cable. For ordering details contact your dealer or APC through the Web site www.apc.com.

3. Add optional accessories to the SmartSlot located on the rear panel.

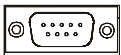
For optimal computer system security, install PowerChute Smart-UPS monitoring software.

Connect power to UPS and load

1. Connect input power to the UPS.
2. Check the PowerView interface display for messages.
3. Turn on the load using the interface display menu options.
 - Bypass mode
 - Turn Load On

Communication Ports

SERIAL PORT



Use only the supplied cable to connect to the serial port. A standard serial interface cable is incompatible with the UPS.

The serial port can be used to configure the Network Management Card.

Emergency Power Off (EPO)

The output power can be disabled in an emergency by closing a switch connected to the EPO.

Adhere to national and local electrical codes when wiring.

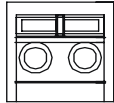
The switch should be connected in a normally open switch contact. External voltage is not required; the switch is driven by 12 V internal supply. In closed condition, 2 mA of current are drawn.

The EPO switch is internally powered by the UPS for use with non-powered switch circuit breakers.

The EPO circuit is considered a Class 2 circuit, (UL, CSA standards) and an SELV circuit (IEC standard).

EPO PORT

(located on rear panel)



EPO Connector

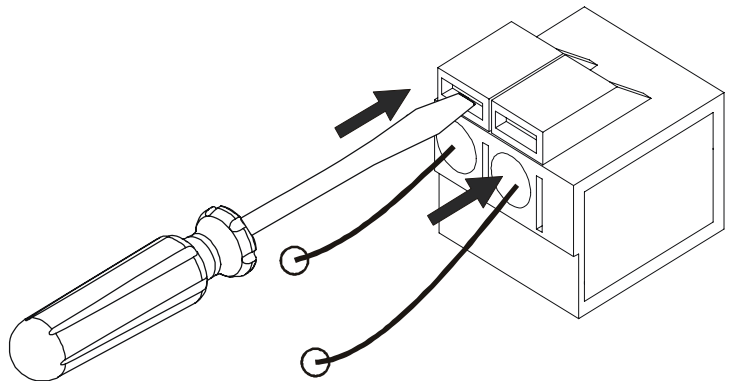
Strip the insulation from one end of each wire to be used for connecting the EPO.

Insert a screwdriver into the slot above the terminal to be wired.

Insert the stripped end of the wire into the terminal.

Remove the screwdriver to secure the wire in the terminal.

Repeat for each terminal.



Both Class 2 and SELV circuits must be isolated from all primary circuitry. Do not connect any circuit to the EPO terminal block unless it can be confirmed that the circuit is Class 2 or SELV. If circuit standard cannot be confirmed, use a contact closure switch.

Use one of the following cable types to connect the UPS to the EPO switch.

- CL2: Class 2 cable for general use.
- CL2P: Plenum cable for use in ducts, plenums, and other spaces used for environmental air.
- CL2R: Riser cable for use in a vertical run in a floor-to-floor shaft.
- CLEX: Limited use cable for use in dwellings and for use in raceways.
- For installation in Canada: Use only CSA certified, type ELC, (extra-low voltage control cable).
- For installation in other countries: Use standard low-voltage cable in accordance with national and local regulations.

Troubleshooting Display Messages

Use the table below to solve minor installation and operation problems. Refer to the APC Web site, www.apc.com for assistance with complex UPS problems.

The PowerView reports various messages on the display, including alarm status and changes in system configuration. This section lists all the PowerView display messages, the reason for the message, and the appropriate corrective action.

Messages may occur simultaneously. If this happens, be sure to review all of the messages for a better understanding of the system condition.

Condition	PowerView Display Message	Reason for Message	Corrective Action
Start-Up	#Batteries changed since last ON.	At least one battery module has been added or removed from the UPS since the last time the Pwr ON command was issued.	No corrective action necessary. Proceed with the start-up.
	Automatic Self Test Started.	The UPS has started pre-programmed battery test.	
	Batt capacity less than Return Batt Cap.	The battery capacity of the UPS is less than the user-specified minimum battery capacity required to turn on the load.	Option 1) Abort the start-up and allow batteries to recharge. Option 2) Continue start-up, with less than minimum battery capacity.
	System Start-Up Configuration Failed.	System configuration error: Start-up diagnostic fault.	Check for other alarms. If the problem persists contact APC Customer Support. Refer to <i>Contact Information</i> in this manual.
	Mains: Site Wiring Fault	Input and Output Jumpers are not configured correctly	Check input wiring tray jumpers and output shorting jumper for compatibility. Refer to the <i>Input/Output Jumper Configurations</i> table in this manual.
	Bypass Not Available - Wrong Ph Seq		Check bypass jumpers in input wiring tray and output shorting jumper for compatibility. Check bypass phases for positive sequence. Refer to the <i>Input/Output Jumper Configurations</i> table in this manual.
	Bypass: Site Wiring Fault		Check bypass jumpers in input wiring tray and output shorting jumper for compatibility. Refer to the <i>Input/Output Jumper Configurations</i> table in this manual.

Condition	PowerView Display Message	Reason for Message	Corrective Action
General Status	# of batteries increased.	At least one battery pair has been added to the system.	No corrective action is necessary.
	# of batteries decreased.	At least one battery pair has been removed from the system.	
	# External Battery Packs increased.	At least one external battery pack has been connected to the UPS.	
	# External Battery Packs decreased.	At least one external battery pack has been disconnected from the UPS.	
Module Failure	Bad Battery Pair.	A battery pair has failed and requires replacement.	Refer to battery pair installation in the external battery pack user manual.
Threshold Alarm	Load Power Is Above Alarm Limit.	The load has exceeded the user-specified load alarm threshold.	Option 1) Use the display interface to raise the alarm threshold. Option 2) Reduce the load
	Load Is No Longer Above Alarm Threshold.	The load exceeded the alarm threshold. The situation has been corrected. Either because the load decreased or the threshold was increased.	No corrective action is necessary.
	Min Runtime Restored.	The system runtime dropped below the configured minimum and has been restored: 1) Additional battery modules were installed. 2) The existing battery modules were recharged. 3) The load was reduced. 4) The user- specified threshold was decreased.	

Condition	PowerView Display Message	Reason for Message	Corrective Action
General Fault	Need Bat Replacement.	One or more battery pairs are in need of replacement.	Refer to battery installation procedure.
	No Batteries Are Connected.	No battery power is available.	Check that batteries are installed and connected properly.
	Discharged Battery.	The UPS is on battery operation and the battery charge is low.	Shut down the system and the load or restore the incoming voltage.
	Low- Battery.	The UPS is on battery operation and the battery charge is low.	
	Weak Batt(s) Detected. Reduced Runtime.	One or more weak battery pairs detected (only applicable for internal battery modules).	Replace the weak battery pairs.
	Batt Temperature Exceeded Upper Limit.	The temperature of one or more battery pack has exceeded system specifications.	Contact APC Customer Support. Refer to <i>Contact Information</i> in this manual.
	Battery Over-Voltage Warning.	The battery voltage is too high and the charger has been deactivated.	
	Runtime Is Below Alarm Threshold.	The predicted runtime is lower than the user-specified minimum runtime alarm threshold. Either the battery capacity has decreased, or the load has increased.	Option 1) Allow the batteries to recharge. Option 2) If possible, increase the number of battery modules. Option 3) Reduce the load. Option 4) Decrease the alarm threshold.

Condition	PowerView Display Message	Reason for Message	Corrective Action
General Fault	Shutdown Due To Low Battery.	The UPS shutdown while on battery operation.	No corrective action is necessary. Note: Should this situation reoccur, consider increasing battery capacity.
	Bypass Not Available Input Freq/Volt out Of Range.	The frequency or voltage is out of acceptable range for bypass. This message occurs when the UPS is online.	Correct the input voltage to acceptable frequency or voltage.
	Mains Not Available. Input Frq/Volt Out of Range.	The frequency or voltage is out of acceptable range for normal operation.	
	Emergency PSU Fault.	Redundant Emergency Power Supply Unit (PSU) is not working. Internal diagnostic fault. The UPS will continue to operate normally.	Contact APC Customer Support. Refer to <i>Contact Information</i> in this manual.
	Fan Fault	A fan has failed.	Contact APC Customer Support. Refer to <i>Contact Information</i> in this manual.
	Static Bypass Switch Fault.	The static bypass switch has failed.	
	System Failure Detected by Surveillance.	The system has detected an internal error.	Check for other alarms. If the problem persists contact APC Customer Support. Refer to <i>Contact Information</i> in this manual.
	System Not Synchronized to Bypass.	System cannot synchronize to bypass mode. Bypass mode may be unavailable.	Option 1) Decrease input frequency sensitivity. Contact APC Customer Support. Refer to <i>Contact Information</i> in this manual. Option 2) Correct bypass input voltage to provide acceptable frequency or voltage.
	UPS In Bypass Due To Fault.	The UPS has transferred to bypass mode due to a fault.	Contact APC Customer Support. Refer to <i>Contact Information</i> in this manual.
	UPS In Bypass Due To Overload.	The load has exceeded the power capacity.	Decrease the load.
UPS Is Overloaded.	The load has exceeded the system power capacity.	Option 1) Decrease the load. Option 2) Check the load distribution on the three phases through the PowerView display. If the load is unevenly distributed, adjust the load distribution.	

Service and Transport

If the unit requires service do not return it to the dealer. Follow these steps:

1. Review the problems discussed in the *Troubleshooting* section to eliminate common problems.
2. If the problem persists, contact APC Customer Support through the APC Web site, **www.apc.com**.
 - Note the model number of the unit, the serial number located on the back of the unit, and the date purchased. If you call APC Customer Support, a technician will ask you to describe the problem and attempt to solve it over the phone. If this is not possible, the technician will issue a Returned Material Authorization Number (RMA#).
 - If the unit is under warranty, repairs are free.
 - Procedures for servicing or returning products may vary internationally. Refer to the APC Web site for country specific instructions.
3. Pack the unit in its original packaging. If this is not available:
 - Pack the unit carefully to avoid damage in transit. Never use Styrofoam beads for packaging. Damage sustained in transit is not covered under warranty.
4. **Always DISCONNECT THE UPS BATTERY before shipping in compliance with U.S. Department of Transportation (DOT) and IATA regulations.** The battery(s) may remain in the unit.
5. Mark the RMA# on the outside of the package.
6. Return the unit by insured, prepaid carrier to the address given to you by Customer Support.

Two-Year Warranty

The limited warranty provided by American Power Conversion (APC®) in this statement of Limited Factory Warranty applies only to products you purchase for your commercial or industrial use in the ordinary course of your business.

Terms of warranty

APC warrants its products to be free from defects in materials and workmanship for a period of two years from the date of purchase. The obligation of APC under this warranty is limited to repairing or replacing, at its sole discretion, any such defective products. This warranty does not apply to equipment that has been damaged by accident, negligence or misapplication or has been altered or modified in any way. Repair or replacement of a defective product or part thereof does not extend the original warranty period. Any parts furnished under this warranty may be new or factory-remanufactured.

Non-transferable warranty

This warranty extends only to the original purchaser who must have properly registered the product. The product may be registered at the APC Web site, www.apc.com.

Exclusions

APC shall not be liable under the warranty if its testing and examination disclose that the alleged defect in the product does not exist or was caused by end user or any third person misuse, negligence, improper installation or testing. Further, APC shall not be liable under the warranty for unauthorized attempts to repair or modify wrong or inadequate electrical voltage or connection, inappropriate on-site operation conditions, corrosive atmosphere, repair, installation, start-up by non-APC designated personnel, a change in location or operating use, exposure to the elements, Acts of God, fire, theft, or installation contrary to APC recommendations or specifications or in any event if the APC serial number has been altered, defaced, or removed, or any other cause beyond the range of the intended use.

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Warranty claims

Customers with warranty claims issues may access the APC customer support network through the Support page of the APC Web site, www.apc.com. Select your country from the country selection pull-down menu. Open the Support tab at the top of the Web page to obtain contact information for customer support in your region.

Contact Information

APC Worldwide Customer Support

Customer support for this or any other APC product is available at no charge in any of the following ways:

- Refer to the APC Web site to access documents in the APC Knowledge Base and to submit customer support requests.
 - **www.apc.com** (Corporate Headquarters)
Connect to localized APC Web sites for specific countries, each of which provides customer support information.
 - **www.apc.com/support/**
Global support searching APC Knowledge Base and using e-support.
- Contact an APC Customer Support center by telephone or e-mail.
Local, country-specific centers:
go to **www.apc.com/support/contact** for information.

Contact the APC representative or other distributor from whom you purchased your APC product for information on how to obtain local customer support.

Regulatory Agency Approvals

230 V models



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